

RUFY1 (A-4): sc-398740



The Power to Question

BACKGROUND

RUFY1 (RUN and FYVE domain containing 1), also known as RABIP4 or ZFYVE12, is a 708 amino acid protein that localizes to the cytoplasm and the early endosome membrane. Highly expressed in testis, lung, brain and kidney, RUFY1 functions to bind phosphatidylinositol 3-phosphate-containing phospholipid vesicles and, via this interaction, participates in early endosomal trafficking. RUFY1 contains one RUN domain and one FYVE-type zinc finger through which it mediates its ability to bind phosphatidylinositol 3-phosphate. Upon DNA damage, RUFY1 may be phosphorylated by ATM or ATR. Additionally, the phosphorylation of Tyr 389 and/or Tyr 400 residues on human RUFY1 is thought to be necessary for endosomal localization. Three isoforms of RUFY1 exist due to alternative splicing events.

REFERENCES

1. Mari, M., et al. 2001. Role of the FYVE finger and the RUN domain for the subcellular localization of Rabip4. *J. Biol. Chem.* 276: 42501-42508.
2. Cormont, M., et al. 2001. A FYVE-finger-containing protein, Rabip4, is a Rab4 effector involved in early endosomal traffic. *Proc. Natl. Acad. Sci. USA* 98: 1637-1642.
3. Yang, J., et al. 2002. Interaction between tyrosine kinase Etk and a RUN domain- and FYVE domain-containing protein RUFY1. A possible role of ETK in regulation of vesicle trafficking. *J. Biol. Chem.* 277: 30219-30226.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610327. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Fouraux, M.A., et al. 2004. Rabip4' is an effector of Rab5 and Rab4 and regulates transport through early endosomes. *Mol. Biol. Cell* 15: 611-624.

CHROMOSOMAL LOCATION

Genetic locus: RUFY1 (human) mapping to 5q35.3; RUFY1 (mouse) mapping to 11 B1.3.

SOURCE

RUFY1 (A-4) is a mouse monoclonal antibody raised against amino acids 461-585 mapping within an internal region of RUFY1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RUFY1 (A-4) is available conjugated to agarose (sc-398740 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398740 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398740 PE), fluorescein (sc-398740 FITC), Alexa Fluor® 488 (sc-398740 AF488), Alexa Fluor® 546 (sc-398740 AF546), Alexa Fluor® 594 (sc-398740 AF594) or Alexa Fluor® 647 (sc-398740 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398740 AF680) or Alexa Fluor® 790 (sc-398740 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

RUFY1 (A-4) is recommended for detection of RUFY1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RUFY1 siRNA (h): sc-91860, RUFY1 siRNA (m): sc-153172, RUFY1 shRNA Plasmid (h): sc-91860-SH, RUFY1 shRNA Plasmid (m): sc-153172-SH, RUFY1 shRNA (h) Lentiviral Particles: sc-91860-V and RUFY1 shRNA (m) Lentiviral Particles: sc-153172-V.

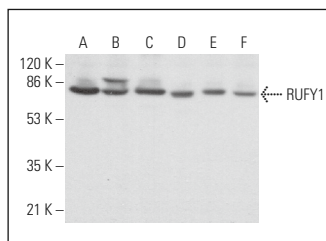
Molecular Weight of RUFY1: 80 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or MEG-01 cell lysate: sc-2283.

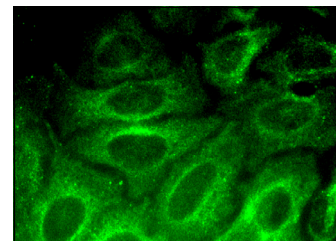
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



RUFY1 (A-4): sc-398740. Western blot analysis of RUFY1 expression in HeLa (A), MEG-01 (B), HL-60 (C), M1 (D), RAW 264.7 (E) and KNRK (F) whole cell lysates.



RUFY1 (A-4): sc-398740. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Rawat, S., et al. 2023. RUFY1 binds Arl8b and mediates endosome-to-TGN Cl-M6PR retrieval for cargo sorting to lysosomes. *J. Cell Biol.* 222: e202108001.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.